

which no phosphate or lime was used. Good field methods along with laboratory methods are necessary for answering such questions.

MCLEAN finds that middle aged leaves of the coconut absorb carbon dioxide faster than either immature or old leaves. These leaves also show a maximum in the morning, a depression at midday, a second rise in the afternoon, followed by the final decline at sunset. Detached coconut leaves showed about the same rate of absorption as attached ones, but the maxima occurred at different times of day. Sugar-cane leaves absorb much more rapidly than coconut.—WM. CROCKER.

**Nitrites and nitrates in plants.**—STROWD<sup>37</sup> has worked on the relative accuracy of various methods for determining nitrites and nitrates in plant tissues. He finds that both the Devarda and Schloesing methods with proper modifications give fair accuracy. Various other methods tried proved unsatisfactory. STROWD<sup>38</sup> also finds strong evidence that the reason for failure of nodule production (in soy bean) in the presence of nitrates is due at least in part to the effect of the high concentration of nitrate in the sap upon the growth and reproduction of *Rhizobium leguminosarum*. He finds that the amount of sugar present decreased with an increase in nitrates, but that some sugar was always present. It is unknown to what extent shortage of sugar is significant. The concentration of nitrates in the roots is far in excess of the concentration in the soil bathing the roots.—WM. CROCKER.

**Humidity and irrigation.**—In the Imperial Valley, California, the irrigation of 400,000 acres of arid lands is commonly supposed to have been accompanied by a decided increase in atmospheric humidity. That this is not the case is shown by data collected by MCGREGOR,<sup>39</sup> who concludes that no appreciable influence is exerted upon atmospheric humidity by the amount of irrigation water used, seasonal fluctuations in humidity being accounted for through factors of much greater geographical extent.—GEO. D. FULLER.

**Conifer grafting.**—The case of a natural grafting of spruce upon pine is reported by ROMELL,<sup>40</sup> who has also investigated the nature of the union as seen in the structure of the wood cells. Along the line of contact there was found evidence of the character of the pits of each being influenced by the proximity of the tissues of the other.—GEO. D. FULLER.

<sup>37</sup> STROWD, W. H., The determination of nitrites and nitrates in plant tissue. *Soil Science* 10:333-342. 1920.

<sup>38</sup> ———, The relation of nitrates to nodule production. *Soil Science* 10:343-356. 1920.

<sup>39</sup> MCGREGOR, E. A., The relation of irrigation to humidity in a recently reclaimed desert. *Plant World* 22:45-52. *figs.* 3. 1919.

<sup>40</sup> ROMELL, LARS-GUNNAR, Anatomy of a grafting of spruce on pine. *Meddel. Från Statens Skogsförs.* 16:61-66. *figs.* 2. 1919.